PROJECT NATURE NEWSLETTER

PROJECT NATURE

MARCH, 2020 ISSUE

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Events

St. Patrick's Day Display
Blacklick Woods Metro Park - Nature Center
14th - 15th March 8:00 am - 6:00 pm
View the display to learn about some Ohio animals that always wear green

Weekly Bird Hike
Scioto Audobon Metro Park - Grange Insurance Audobon Center
14th, 21st, 28th March 10:00 am - 11:30 am
Hike with experienced birders to find and learn about birds (Binoculars and field guides can be provided)

Bird Hike: Woodpeckers
Blendon Woods Metro Park - Nature Center
14th March 10:00 am - 11:00 am
Walk 2 miles on the trails to search for woodpeckers

Bison
Battelle Darby Metro Park - Nature Center
14th March 4:00 pm - 5:00 pm
Take a 1-mile hike to see North America's largest land mammal

Metro Parks Hiking Club
Inniswood Metro Gardens - Gardens Entrance
14th March 2:00 pm - 3:00 pm
Join Metro Parks for a moderate paced 2-mile hike around the gardens and meet other like-minded people

Sunrise Hike
Clear Creek Metro Park - Fern Parking Lot
14th March 6:30 am - 9:00 am
Take in sunrise views on a rugged 4-mile hike. Be prepared to navigate unimproved, uneven, and steep terrain.

Timberdoodle Time
Three Creeks Metro Park - Confluence Area
14th March 7:30 pm - 8:30 pm
Take a 1.5-mile walk to watch and listen to the aerial courtship display of the American woodcock

Bon AppéCreek
Battelle Darby Metro Park - Nature Center
15th & 21st March 1:00 pm - 1:30 pm
Enjoy the fish feeding frenzy as you help feed them worms, crickets, and other foods

Creature Feature: Reptiles and Amphibians
Highbanks Metro Park - Nature Center
15th March 2:00 pm - 2:30 pm
Meet amphibians and reptiles to learn about these amazing animals

Whirling Woodcocks
Battelle Darby Metro Park - Nature Center
21st March 7:30 pm - 8:30 pm
Search for this fascinating bird as he performs his aerial courtship dance

Winnowing Rock Hike
Clear Creek Metro Park - Park Office
21st March 10:30 am - 12:30 pm
Search for signs of spring on a 4-mile backcountry hike to Winnowing Rock. Terrain in the backcountry is unimproved, uneven, and steep in areas.

Herpetology in a Day
Blacklick Woods Metro Park - Nature Center
22nd March 2:00 pm - 3:00 pm
Take a crash course in herpetology and meet some live amphibians and reptiles

Events

Rainbows in the Water
Battelle Darby Metro Park - Indian Ridge
22nd March 1:30 pm - 2:30 pm
Celebrate World Water Day by observing several species of darters at their most colorful. You are welcome to join in the cold water to hunt for these fish, but waders are recommended.

Wetland Wonders Display
Blacklick Woods Metro Park - Nature Center
22nd March 8:00 am - 6:00 pm
View the display to learn how wonderful wetlands really are

Project FeederWatch
Blendon Woods Metro Park - Nature Center
28th & 29th March 10:00 am - 2:00 pm
Drop by to help collect data for this important citizen science project that tracks trends in winter bird distribution and abundance, and find out how you can participate at home. No experience necessary! Enjoy a cup of hot coffee or cocoa while watching the birds.

Vernal Pools
Battelle Darby Metro Park - Nature Center
28th March 11:00 am - 4:00 pm
Celebrate some of our strangest and most important wetlands and the creatures that live there. Live animals and displays from local organizations will be on exhibit. Take a hike with a naturalist to see an active vernal pool and discover what we catch in our traps.

Eagle Watch Weekend
Madison Church Prkng Lot - 3565 Bixby Rd, Groveport
28th March 10:00 am - 11:30 am, 1:00 pm - 2:30 pm
29th March 2:00 pm - 3:30 pm
Take a 1-mile off-trail walk to see the nesting bald eagles through a spotting scope

Vernal Pool Monitoring
Glacier Ridge Metro Park - Shelter House
28th March 9:00 am - 11:00 am
Join naturalists and volunteers to help survey creatures in the vernal pools. Please bring waterproof boots or shoes you don't mind getting muddy.

Metro Parks Hiking Club
Blendon Woods Metro Park - Nature Center
29th March 2:00 pm - 3:00 pm
Join Metro Parks for a moderately paced 2-mile hike and meet other like minded people!

Woodcock Watch
Blendon Woods Metro Park - Natural Play Area Shelter
29th March 7:30 pm - 8:30 pm
Woodcocks are back, dancing their hearts out. Don’t miss this amazing spring spectacle!

So You Want To Be A Metro Parks Volunteer!
Battelle Darby Metro Park - Nature Center
29th March 3:30 pm - 5:00 pm
Join us to learn more about the many volunteering opportunities at Metro Parks. This event is the first step in becoming a volunteer. Please fill out a volunteer application at metroparks.net prior to attending the event.

Eagle Walk
Highbanks Metro Park - Northern Shelter
29th March 2:00 pm - 3:00 pm
Hike 2.5-miles and look for Bald Eagles in their nest

Morning Coffee and Wildlife Watch
Blacklick Woods Metro Park - Nature Center
4th April 8:00 am - 10:00 am
View animals through the nature center windows and enjoy a cup of coffee

Events

Signs of Spring
Blendon Woods Metro Park - Nature Center
4th April 2:00 pm - 3:00 pm
Search for signs of spring on a 2mi hike

Bon AppéCreek
Battelle Darby Metro Park - Nature Center
4th & 18th April 1:00 pm - 1:30 pm
Enjoy the fish feeding frenzy as you help feed them worms, crickets, and other foods

Spring Wildflowers
Battelle Darby Metro Park - Cedar Ridge
4th April 11:00 am - 12:00 pm
Stop and smell the spring ephemerals on a wildflower walk

Forest Night Hike
Clear Creek Metro Park - Barnebey-Hambelton Picnic Area
4th April 8:00 pm - 9:30 pm
Experience the forest after dark on a 1.5 mile hike. Wear sturdy hiking shoes

Frog Frenzy
Three Creeks Metro Park - Confluence Area
4th April 8:00 pm - 9:30 pm
Bring a flashlight and your wading shoes to search for frogs in the wetlands and listen to their mating calls

Bird Hike: Early Migrants
Blendon Woods Metro Park - Nature Center
5th April 9:00 am - 10:00 am
Look for migrating birds as we walk 2-miles on the trails

Waterfowl
Battelle Darby Metro Park - Wet Prairie Access
5th April 10:00 am - 11:00 am
Learn about migrating waterfowl visiting Darby!

Bison
Battelle Darby Metro Park - Nature Center
5th April 4:00 pm - 5:00 pm
Not a cow, not a buffalo, it's a bison! Join for a short walk and talk about this 2,000 pound animal.

Lantern Hike
Blacklick Woods Metro Park - Nature Center
11th April 8:00 pm - 10:00 pm
Take a 1.5-mile lantern-lit hike

Eagle Walk
Highbanks Metro Park - Northern Shelter
11th April 2:00 pm - 3:00 pm
Hike 2.5-miles and look for Bald Eagles in their nest

Tree ID and Diagnostics
Inniswood Metro Gardens - Gardens Entrance
11th April 10:00 am - 12:00 pm
Join Jim Chatfield, Ohio State University Associate Professor and Extension Specialist, as he walks you through Inniswood, identifying trees and discussing proper tree selection, identification, and diagnostics.

Weekly Bird Hike
Scioto Audobon Metro Park - Grange Insurance Audobon Center
4th, 11th, 25th April 10:00 am - 11:30 am
Hike with experienced birders to find and learn about birds (Binoculars and field guides can be provided)

Cavity-Nesting Birds

Birds that build their nests, lay eggs and raise their young in a sheltered chamber or a cavity are termed as cavity-nesting birds. There is a diverse group of cavity-nesting birds. From woodpeckers to chickadees, from some waterfowl, such as Wood Ducks to even some raptors, such as American Kestrel and some species of owls — all use some form of cavity to nest. These cavity-nesters mostly rely on snags for habitat. There are about 85 species of cavity-nesting bird species in North America. In Ohio, we have over two dozen species of cavity-nesting birds!

Eastern Bluebird

Snag

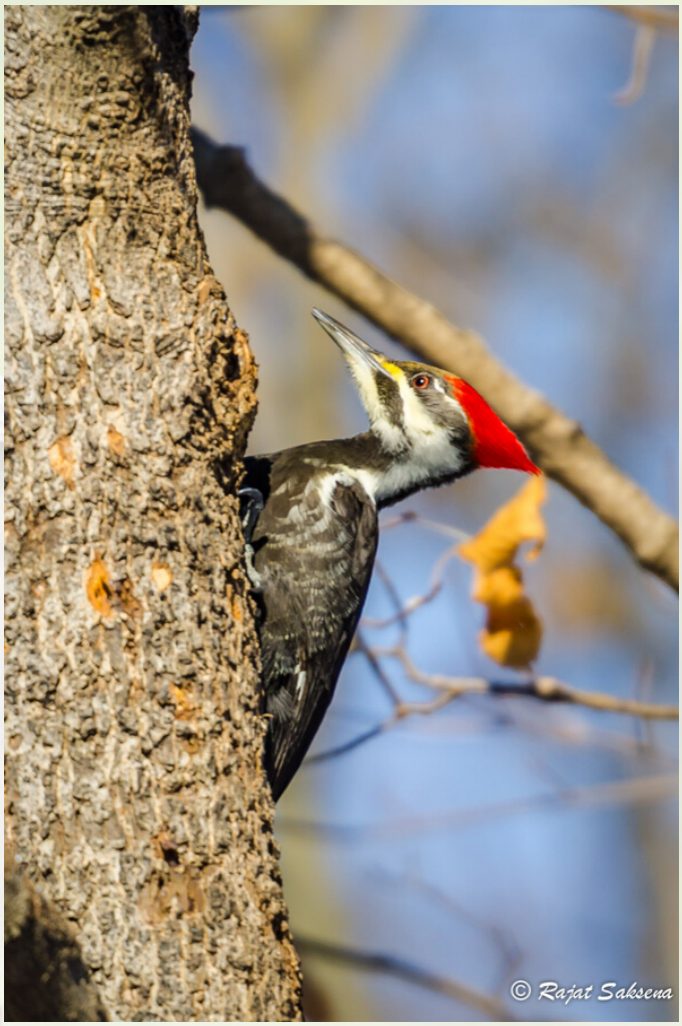
In forest ecology, a snag refers to a standing dead or dying tree. Snags are an important structural and functional component of a forest.

There are two types of cavity-nesting birds

Primary Cavity-nesters These birds have a strong bill such that they can excavate their own cavity. Woodpeckers are one of the most common primary cavity-nesters.

Secondary Cavity-nesters Birds such as bluebirds, swallows, and wrens who are not strong enough to drill their own cavities, utilize either cavities created naturally or abandoned by other primary cavity-nesters.

A potential site for cavity-nesting birds becomes available when a tree dies or a rot persists in a part of a live tree. **Primary excavators** start excavating a cavity in a recently formed snag, with the bark still intact. Woodpeckers, such as Hairy Woodpecker and Pileated Woodpecker, have a strong bill, and can drill through the hard wood of a fresh snag. As the snag decays and wood gets softer, it attracts a different group of primary excavators. Primary excavators that use softer snags to create a nesting cavity (and hence considered **"weak excavators"**) include chickadees and nuthatches as well as some species of woodpeckers, such as Downy Woodpecker and Northern Flicker.



Pileated Woodpecker

The primary cavity-nesting species usually excavate a new cavity each year as part of courtship behavior to attract a mate, and hence the cavity abandoned by these primary excavators is quickly claimed by the secondary cavity-nesters. Secondary cavity-nesters may also find a naturally-occurring cavity in a tree and use it. Some species of secondary cavity-nesting birds might aggressively take over a cavity by driving out another secondary cavity-nesting bird. Secondary cavity-nesters may make some minor adjustments to the cavity, such as adding or removing some nesting material or changing the entrance, but they do not make any significant modifications to the cavity.

Ecological Importance

Cavity-nesting birds play an extremely important role in the ecosystem.

- They help the natural decay process of the downed wood — a structural and functional component of forests — returning the nutrients back into the soil.
- They consume insects to feed themselves as well as their young, and hence act as a natural pest control and keep the insect population in check. Woodpeckers are especially important predators of many species of tree-killing bark beetles.
- Primary cavity-nesters also create key habitat for not just secondary cavity-nesting birds but several other groups of animals, such as insects (e.g. cavity-nesting bees and wasps) and small mammals (e.g. mice and flying squirrels), making them an ecological keystone.

Hairy Woodpecker

Habitat

The abundance of nesting habitat for cavity-nesters — snag — is dependent on the successional stage of the forest. Mid- to late-successional stages of a forest have more snags. [*To learn about forest ecology, read the August 2019 issue of Project Nature Newsletter.*] Mature forests generally have more snags due to a full and closed canopy shading the understory and creating competition for light. Also, older trees have more time to develop snags. But that doesn't mean that mature forests are a better habitat. Each successional stage of the forest offers a potential habitat for a different group of bird species. For example, younger forest stands are particularly useful to birds such as bluebirds, swallows, and sapsuckers.

White-breasted Nuthatch

Riparian zones, waterways and forested wetlands with snags provide habitat for a host of cavity-nesting waterfowl, such as Wood Ducks, and Hooded Mergansers.

Large snags are critical for bigger birds, such as Pileated Woodpecker and cavity-nesting waterfowl. Small snags are beneficial to the weak excavators, particularly when they are soft.

Snags also provide habitat to many insects, providing foraging opportunities for the birds. Thus, snags serve a dual purpose for the cavity-nesting birds.

Riparian Zone

Riparian zones are the transitional areas between land and water, including the margins of streams, rivers, lakes, and wetlands. Riparian zones play an important ecological role in supporting a rich biodiversity of plants and animals, and help in maintaining good water quality. [*To learn more about stream and water quality, read the July 2019 and September 2019 issues of Project Nature newsletter.*]

Threat

Following European settlement, the forests of eastern United States were almost cleared by the early twentieth century for agriculture and other development. Habitat loss due to deforestation was the primary cause of the dwindling population of several species of cavity-nesting birds.

Carolina Chickadee

Snags have often been considered undesirable by landowners and forest and recreation managers for several reasons. Snags may not appear aesthetically pleasing. Traditional forest management practices may consider snags as potential fire- or other safety-hazards. They may harbor forest pest insects that could become vectors for disease. For those reasons, they are often removed — thus removing critical habitat for cavity-nesting birds. Even well-intentioned practices of mostly harvesting the large and dead trees (in order to protect the environment by saving young live trees) has a negative impact on the cavity-nesting birds!

Forest management also often involves preventing natural forest fires. Fire-suppression is another factor that causes a negative impact on the forest ecology. Forest fires help create cavities, and hence habitat for cavity-nesting birds. Very counter-intuitive, but low-intensity regular forest fires play a vital role in cycling through ecological succession. The Karner Blue butterfly was almost extirpated (locally extinct from a particular geographic area, but exists elsewhere) from Ohio because of fire-suppression, which didn't allow for the successional habitat — critical for the butterfly — to develop. The management practice of fire-suppression has a double impact. It not only prevents the small and low-intensity fires that create habitat for cavity-nesters, it also increases the propensity of the large and high-intensity fires that destroy the habitat altogether!

Red-headed Woodpecker

Red-bellied Woodpecker

In addition to the loss of nesting habitat, loss of foraging habitat also negatively impacts the cavity-nesting birds. The reduction in both nesting and foraging habitat leads to stiff competition for the scarce resources, in which the more docile ones lose! For example, the

Prothonotary Warbler can be easily evicted by the more aggressive House Wren, and even though smaller in size, a House Wren can outcompete larger cavity-nesting birds, such as bluebirds and swallows. A House Wren would harass and peck at the eggs and nestlings of other birds with its sharp bill and occasionally even kill an adult bird.

House Wren

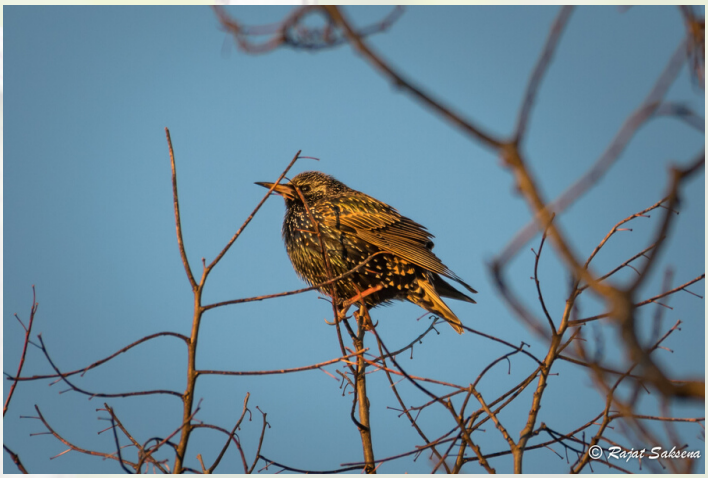
House Wren

The extensive use of pesticides in agriculture has also had a significant impact on the birds — both directly and indirectly. Many pesticides have chemicals that are toxic to the birds if consumed directly. Such toxins carry up the food chain, and so birds that may not be in direct contact with pesticides can still be harmed by consuming an infected insect or another bird they prey upon. But even the intended purpose of pesticides impacts the birds because with fewer insects, birds lose their major food source!

One of the most significant threats to many native cavity-nesting bird species comes from the non-native invasive species. **House Sparrows** and **European Starlings** have posed a major threat to native bird species, such as bluebirds and swallows. House Sparrows were introduced in North America from Europe in 1851, and they quickly multiplied. Today, House Sparrows are found in super abundance in almost all urban areas. They are extremely adaptable and can nest in both cavities as well as in the open. House Sparrows are aggressive and often invade nests of native cavity-nesting birds, destroy the eggs and kill nestlings and even adults by pecking at them with their strong bill. House Sparrows reach sexual maturity quicker than many of the native birds and that gives them an additional advantage at procreating. European Starlings were brought to the United States in the early 1890s by a group of Shakespeare enthusiasts, who wanted to have all the birds that Shakespeare ever mentioned, in America.

Started with only about a hundred birds that were introduced in New York's Central Park, the European Starlings quickly multiplied from a population of 100 to over 200 million today, and have become one of the most common birds in North America, ranging from Alaska to Mexico. Since all the starlings in the US descended from those hundred that were released, there is very little genetic variation between the starling populations, and starlings from the east coast are almost indistinguishable from those of the west — a trait that's usually not beneficial for a species' success. But somehow the lack of genetic diversity doesn't seem to affect the starlings! European Starlings are cavity-nesters and just like House Sparrows, they are one of the world's most successful bird species. Since both are able to quickly adapt to a new environment, they are also one of the most invasive bird species, posing a major threat to our native cavity-nesting birds.

House Sparrow



European Starling

Fun Fact: A flock of starlings is known as a ***murmuration***. Murmuration also refers to the breathtaking formations that the hundreds of thousands of starlings make in the sky!
https://tinyurl.com/jsjhfst

Note that in contrast to the European Starlings or House Sparrows, House Wrens are a native species and protected by the Migratory Bird Treaty Act!

Suggested Management Practices

Since nesting requirements of cavity-nesting birds depend on the species and varies across different species, there is no one-size-fits-all solution. However, there are several forest management practices that would generally help cavity-nesting birds. For example, retaining existing snags as well as the large-diameter trees for future snag recruitment is a good practice. Snags can even be created by using techniques such as *girdling* and *topping*.

Girdling It is the process of completely removing a strip of bark from around the circumference of a tree trunk or branch, thus cutting off the water- and nutrient-carrying vascular tissues, and killing the tree. Girdling is a traditional method of killing trees without felling them.

Topping It is the process of removing the large branches from the treetop and leaving only lateral branches and stumps on the tree, which usually results in the tree dying. Tree topping is not an advisable technique for pruning the tree to control its size; only if one wants to create a snag or get rid of an unwanted tree.

Northern Flicker

Several cavity-nesting birds are non-migrating resident species and hence are more amenable to local forest management practices than migrating species. Such practices not only help the cavity-nesting birds by providing them with habitat, it also keeps the entire forest healthier!

An Amazing Behavioral Shift

About 7,000 years ago, Native Americans in the south-western United States started to put out dried, hollowed-out gourds in order to attract Purple Martins, who would build their nests in the gourd cavity. The Native Americans valued the Purple Martins as they would eat the insect pests and perhaps alert them of any intruders. The birds also found it beneficial, since having

Illustration of an Indian village with dried gourds to attract Purple Martins | A natural gourd pole
Source: Purple Martin Conservation Association (purplemartin.org)

their nest in an area bustling with human activity provided them with protection from predators, such as hawks and snakes. Soon more villages and tribes started with this practice. When European settlers arrived, they were also enamored by Purple Martins and started putting up dried gourds for them to nest, just like the Native Americans. Over time, due to the successful nesting in human-made cavities, combined with the decline in availability of naturally occurring cavities, the eastern sub-species of Purple Martin completely changed their behavior, and now they only nest in human-made cavities and close to human inhabitation! (Purple Martins in the Pacific Northwest still nest in cavities abandoned by woodpeckers and those in the Southwest, nest in saguaro cacti.) The modern Purple Martin nestboxes are built in gourd-style boxes.

Modern gourd-style Purple Martin rigs
Photo Credit: Paula Ziebarth

In addition to the Purple Martin, there are two other North American bird species which have made a complete shift in their nesting behavior — Chimney Swift and Barn Swallow. Chimney Swifts used to nest in huge hollow trees, caves or cliff faces. European settlers cleared much of the forests and reduced their natural habitat. But they brought with them chimneys! And the Chimney Swift quickly adapted to nest in the chimneys. But a recent shift in chimney design toward covered and narrow flues became unsuitable for their nesting, contributing to a decline in their numbers. So, conservation efforts began to install chimney-like towers, specifically for the purpose of providing nesting habitat for these birds. Barn Swallows used to nest in the mouth of caves or other niches in large rocks. Now they nest in barns, sheds or under eaves, bridges or other human-made structures. Today the only North American Barn Swallow population that still regularly uses caves as nest sites occurs in the Channel Islands off the California coast.

Chimney Swift tower at Blendon Woods Metro Park

Watch the life in a Purple Martin nest https://tinyurl.com/tusfdpz

Conservation and Hope!

Bluebirds are arguably one of the most loved of all bird species in North America. In the early 1900s, people began to observe a noticeable reduction in the abundance of bluebirds and other cavity-nesting birds. Between 1920-1970, it was estimated that the population of Eastern Bluebird had dropped by an alarming 90%, making it a species of special concern in several states, and listed as 'endangered' in Connecticut. Conservationists advocated for setting up nestboxes and establishing nestbox trails to provide nesting habitat for the cavity-nesting birds, who would readily use it to build their nest in.

In 1978, a retired agricultural biochemist from Maryland, Dr. Lawrence Zeleny, along with fellow-conservationists, founded the N**orth American Bluebird Society** (NABS). NABS is a conservation and research organization dedicated to the recovery of not just bluebirds but all other native cavity-nesting birds. Today, the society has members all across the continent. **Ohio Bluebird Society** is an affiliate of NABS. Another organization that has spearheaded continent-wide conservation efforts for birds, including cavity-nesting birds, is **Cornell Lab of Ornithology** — a leading research organization dedicated to the conservation and protection of birds. **NestWatch** is one of the many citizen science programs run by Cornell Lab of Ornithology, to monitor the status and trends in the reproductive biology of birds in general.

A Tree Swallow couple perched atop the nestbox guarding their nest

Hundreds of thousands of nestboxes have been setup all across the North American continent to help the cavity-nesting birds, and almost as many citizen scientists regularly monitor these nestboxes. While setting up nestboxes provides the much-needed habitat for the birds, simply setting up the box and leaving it afterwards is not enough and can potentially cause problems.

A snag in the forest with holes created by cavity-nesters

Careful monitoring of the boxes is extremely critical to the success of restoration and conservations efforts. Nestbox monitoring serves two purposes. First, regular monitoring makes sure the native bird species are nesting successfully; if there are invasions by a non-native species, monitors can take appropriate action to drive them out or trap them; if there is pest infestation, monitors can take recommended steps to get rid of the pests; if the chicks or adults are found injured or sick, monitors can take them to a wildlife clinic. In short, regularly monitoring the nestboxes makes sure that the nestboxes do not become an ecological trap for the very birds we are trying to help. The other valuable contribution that the volunteer citizen scientists monitoring the nestboxes make is collect critical data, such as how many boxes had a nesting attempt, whether the attempt was successful, how many eggs were laid and when, how many of those hatched, how many chicks successfully fledged, and how many broods nested in a given box in one season. Such wealth of data collected by the nestbox monitors over several years and across the entire continent helps inform and evolve future restoration efforts as well as conservation policies.

Because of such conservation initiatives aided by the hundreds of thousands of citizen scientists, the population of many species of cavity-nesting birds has rebounded. Bluebirds have been removed from species of special concern. However, none of the threats has diminished! Natural nesting habitat is still less than enough, non-native invasive species are still as much of a threat, and climate change further adds to the already stressed ecosystem.

Tree Swallow eggs

Eastern Bluebird eggs

Hence, such conservation efforts need to be continued and even ramped up. Conservation stories, such as that of bluebirds, offer hope. More importantly, it gives a proof of concept that a concerted effort by volunteer citizen scientists can not only bring back a species from the brink of extinction, but also fight other environmental challenges causing or caused by climate change!

Day-old hungry Eastern Bluebird chicks

If interested in nestbox monitoring or other citizen science conservation projects for birds, please contact

Darlene Sillick - azuretrails@columbus.rr.com
Cornell Nestwatch Chapter Coordinator
Ohio Bluebird Society trustee, VP, Franklin County Area Contact
Ohio Ornithology Society Conservation Committee

Paula Ziebarth - paulazbird@gmail.com
Delaware and Ottawa County Area Contact, Ohio Bluebird Society
NestWatch Coordinator, OBS- Delaware County Chapter
Lake Erie Islands Conservancy board member

Cover Photo: *A Tree Swallow peeking out of her house to greet the human who was visiting to check on her family!*

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To subscribe to the newsletter or for any questions/comments/feedback, please email Rajat Saksena

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